What is claimed is:

1. A method for producing a semiconductor light emitting device, comprising the step of:

(a) growing a nitride type III-V group compound semiconductor layer that forms a light emitting device structure on a principal plane of a nitride type III-V group compound semiconductor substrate on which a plurality of second regions made of a crystal having a second average dislocation density are regularly arranged in a first region made of a crystal having a first average dislocation density so as to produce a semiconductor light emitting device, the second average dislocation density being greater than the first average dislocation density,

wherein the nitride type III-V group compound semiconductor layer does not directly contact the second regions on the principal plane of the nitride type III-V group compound semiconductor substrate.

2. The method for producing the semiconductor light emitting device as set forth in claim 1, further comprising the step of:

(b) removing at least part of the second regions from the principal plane of the nitride type III-V group compound semiconductor substrate,

wherein the removing step (b) is followed by the growing step (a).

3. The method for producing the semiconductor

light emitting device as set forth in claim 2, further comprising the step of:

(c) removing the second regions from the principal plane of the nitride type III-V group compound semiconductor substrate for a predetermined depth,

wherein the removing step (c) is followed by the growing step (a).

4. The method for producing the semiconductor light emitting device as set forth in claim 3,

wherein the predetermined depth is 1 μm or greater.

5. The method for producing the semiconductor light emitting device as set forth in claim 3,

wherein the predetermined depth is 10 μm or greater.

6. The method for producing the semiconductor light emitting device as set forth in claim 1, further comprising the step of:

(d) removing all the second regions from the principal plane of the nitride type III-V group compound semiconductor substrate,

wherein the removing step (d) is followed by the growing step (a).

7. The method for producing the semiconductor light emitting device as set forth in claim 2,

wherein the removing step (b) is performed by

etching out the second regions.

8. The method for producing the semiconductor light emitting device as set forth in claim 7,

wherein the removing step (b) is performed by wet-etching the second regions.

9. The method for producing the semiconductor light emitting device as set forth in claim 7,

wherein the removing step (b) is performed by dry-etching the second regions.

10. The method for producing the semiconductor light emitting device as set forth in claim 7,

wherein the removing step (b) is performed by thermochemically-etching the second regions.

11. The method for producing the semiconductor light emitting device as set forth in claim 1, further comprising the step of:

(e) coating the front surface of the second regions with a coating layer,

wherein the coating step (e) is followed by the growing step (a).

12. The method for producing the semiconductor light emitting device as set forth in claim 11, further comprising the step of:

(f) removing the second regions from the principal plane of the nitride type III-V group compound semiconductor substrate for a predetermined depth.

13. The method for producing the semiconductor light emitting device as set forth in claim 12, further comprising the step of:

(g) filling the removed portions of the second regions with the coating layer.

14. The method for producing the semiconductor light emitting device as set forth in claim 11,

wherein the front surface of the coating layer is higher than the principal plane of the nitride type III-V group compound semiconductor substrate.

15. The method for producing the semiconductor light emitting device as set forth in claim 11,

wherein the front surface of the coating layer accords with the principal plane of the nitride type III-V group compound semiconductor substrate.

16. The method for producing the semiconductor light emitting device as set forth in claim 1,

wherein the plurality of second regions are periodically arranged.

17. The method for producing the semiconductor light emitting device as set forth in claim 1,

wherein the plurality of second regions are periodically arranged in a hexagonal lattice shape.

18. The method for producing the semiconductor light emitting device as set forth in claim 1,

wherein the plurality of second regions are periodically arranged in a rectangular lattice shape.

19. The method for producing the semiconductor light emitting device as set forth in claim 1,

wherein the plurality of second regions are periodically arranged in a square lattice shape.

20. The method for producing the semiconductor light emitting device as set forth in claim 1,

wherein the interval of the two adjacent second regions is 20 μm or greater.

21. The method for producing the semiconductor light emitting device as set forth in claim 1,

wherein the interval of the two adjacent second regions is 50 μm or greater.

22. The method for producing the semiconductor light emitting device as set forth in claim 1,

wherein the interval of the two adjacent second regions is 100 μm or greater.

23. The method for producing the semiconductor light emitting device as set forth in claim 16,

wherein the arrangement period of the second regions is 20 μm or greater.

24. The method for producing the semiconductor light emitting device as set forth in claim 16,

wherein the arrangement period of the second regions is 50 μm or greater.

25. The method for producing the semiconductor light emitting device as set forth in claim 16,

wherein the arrangement period of the second

regions is 100 μm or greater.

26. The method for producing the semiconductor light emitting device as set forth in claim 1,

wherein the second regions are formed in an irregular polygonal prism shape.

27. The method for producing the semiconductor light emitting device as set forth in claim 1,

wherein third regions are disposed between the first region and the second regions, the third regions having a third average dislocation density that is greater than the first average dislocation density and lower than the second average dislocation density.

28. The method for producing the semiconductor light emitting device as set forth in claim 27,

wherein the nitride type III-V group compound semiconductor layer does not directly contact the second regions and the third regions on the principal plane of the nitride type III-V group compound semiconductor substrate.

29. The method for producing the semiconductor light emitting device as set forth in claim 28, further comprising the step of:

(h) removing at least part of the second regions and the third regions from the principal plane of the nitride type III-V group compound semiconductor substrate,

wherein the removing step (h) is followed by

the growing step (a).

30. The method for producing the semiconductor light emitting device as set forth in claim 1,

wherein the diameter of each of the second regions is 10 μm or greater and 100 μm or smaller.

31. The method for producing the semiconductor light emitting device as set forth in claim 1,

wherein the diameter of each of the second regions is 20 μm or greater and 50 μm or smaller.

32. The method for producing the semiconductor light emitting device as set forth in claim 27,

wherein the diameter of each of the third regions is greater than the diameter of each of the second regions by 20 μm or greater and 200 μm or smaller.

33. The method for producing the semiconductor light emitting device as set forth in claim 27,

wherein the diameter of each of the third regions is greater than the diameter of each of the second regions by 40 μm or greater and 160 μm or smaller.

34. The method for producing the semiconductor light emitting device as set forth in claim 27,

wherein the diameter of each of the third regions is greater than the diameter of each of the second regions by 60 μm or greater and 140 μm or smaller.

35. The method for producing the semiconductor light emitting device as set forth in claim 1,

wherein the average dislocation density of each of the second regions is five times greater than the average dislocation density of the first region.

36. The method for producing the semiconductor light emitting device as set forth in claim 1,

wherein the average dislocation density of each of the second regions is 1×10^{8} cm^{-2} or greater.

37. The method for producing the semiconductor light emitting device as set forth in claim 1,

wherein the average dislocation density of the first region is 2×10^{6} cm^{-2} or smaller and the average dislocation density of each of the second regions is 1×10^{8} cm^{-2} or greater.

38. The method for producing the semiconductor light emitting device as set forth in claim 27,

wherein the average dislocation density of the first region is 2×10^{6} cm^{-2} or smaller, the average dislocation density of each of the second regions is 1×10^{8} cm^{-2} or greater, and the average dislocation density of each of the third regions is 1×10^{8} cm^{-2} or smaller and 2×10^{6} cm^{-2} or greater.

39. The method for producing the semiconductor light emitting device as set forth in claim 1,

wherein the nitride type III-V group compound semiconductor substrate is made of $Al_xB_yGa_{1-x-y-z}In_zAs_uN_{1-u-}$

${}_{v}P_{v}$ (where $0 \le x \le 1$, $0 \le y \le 1$, $0 \le z \le 1$, $0 \le u \le 1$, $0 \le v \le 1$, $0 \le x + y + z < 1$, $0 \le u + v < 1$).

40. The method for producing the semiconductor light emitting device as set forth in claim 1,

wherein the nitride type III-V group compound semiconductor substrate is made of $Al_xB_yGa_{1-x-y-z}In_zN$ (where $0 \le x \le 1$, $0 \le y \le 1$, $0 \le z \le 1$, $0 \le x + y + z < 1$).

41. The method for producing the semiconductor light emitting device as set forth in claim 1,

wherein the nitride type III-V group compound semiconductor substrate is made of $Al_xGa_{1-x-z}In_zN$ (where $0 \le x \le 1$, $0 \le z \le 1$).

42. The method for producing the semiconductor light emitting device as set forth in claim 1,

wherein the nitride type III-V group compound semiconductor substrate is made of GaN.

43. The method for producing the semiconductor light emitting device as set forth in claim 1,

wherein the semiconductor light emitting device is a semiconductor laser.

44. The method for producing the semiconductor light emitting device as set forth in claim 1,

wherein the semiconductor light emitting device is a light emitting diode.

45. A method for producing a semiconductor device, comprising the step of:

growing a nitride type III-V group compound semiconductor layer that forms a device structure on a principal plane of a nitride type III-V group compound semiconductor substrate on which a plurality of second regions made of a crystal having a second average dislocation density are regularly arranged in a first region made of a crystal having a first average dislocation density so as to produce a semiconductor device, the second average dislocation density being greater than the first average dislocation density,

wherein the nitride type III-V group compound semiconductor layer does not directly contact the second regions on the principal plane of the nitride type III-V group compound semiconductor substrate.

46. The method for producing the semiconductor device as set forth in claim 45,

wherein the semiconductor device is a light emitting device.

47. The method for producing the semiconductor device as set forth in claim 45,

wherein the semiconductor device is a photo detector.

48. The method for producing the semiconductor device as set forth in claim 45,

wherein the semiconductor device is an electron traveling device.

49. A method for producing a semiconductor light

emitting device, comprising the step of:

growing a nitride type III-V group compound semiconductor layer that forms a light emitting device structure on a principal plane of a nitride type III-V group compound semiconductor substrate on which a plurality of second regions made of a crystal having a second average dislocation density are regularly arranged in a first region made of a crystal having a first average dislocation density so as to produce a semiconductor light emitting device, the second average dislocation density being greater than the first average dislocation density, the second regions being arranged at a first interval in a first direction and at a second interval in a second direction perpendicular to the first direction, the second interval being smaller than the first interval,

wherein the nitride type III-V group compound semiconductor layer does not directly contact the second regions on the principal plane of the nitride type III-V group compound semiconductor substrate.

50. A method for producing a semiconductor light emitting device, comprising the step of:

growing a nitride type III-V group compound semiconductor layer that forms a light emitting device structure on a principal plane of a nitride type III-V group compound semiconductor substrate on which a plurality of second regions that linearly extend and

that are made of a crystal having a second average dislocation density are regularly arranged in parallel in a first region made of a crystal having a first average dislocation density so as to produce a semiconductor light emitting device, the second average dislocation density being greater than the first average dislocation density,

wherein the nitride type III-V group compound semiconductor layer does not directly contact the second regions on the principal plane of the nitride type III-V group compound semiconductor substrate.

51. A method for producing a semiconductor device, comprising the step of:

growing a nitride type III-V group compound semiconductor layer that forms a device structure on a principal plane of a nitride type III-V group compound semiconductor substrate on which a plurality of second regions made of a crystal having a second average dislocation density are regularly arranged in a first region made of a crystal having a first average dislocation density so as to produce a semiconductor device, the second average dislocation density being greater than the first average dislocation density, the second regions being arranged at a first interval in a first direction and at a second interval in a second direction perpendicular to the first direction, the second interval being smaller than the first interval,

wherein the nitride type III-V group compound semiconductor layer does not directly contact the second regions on the principal plane of the nitride type III-V group compound semiconductor substrate.

52. A method for producing a semiconductor device, comprising the step of:

growing a nitride type III-V group compound semiconductor layer that forms a device structure on a principal plane of a nitride type III-V group compound semiconductor substrate on which a plurality of second regions that linearly extend and that are made of a crystal having a second average dislocation density are regularly arranged in parallel in a first region made of a crystal having a first average dislocation density so as to produce a semiconductor device, the second average dislocation density being greater than the first average dislocation density,

wherein the nitride type III-V group compound semiconductor layer does not directly contact the second regions on the principal plane of the nitride type III-V group compound semiconductor substrate.

53. A method for growing a nitride type III-V group compound semiconductor layer on a principal plane of a nitride type III-V group compound semiconductor substrate on which a second region made of a crystal having a second average dislocation density is contained in a first region made of a crystal having a

first average dislocation density, the second average dislocation density being greater than the first average dislocation density,

wherein the nitride type III-V group compound semiconductor layer does not directly contact the second region on the principal plane of the nitride type III-V group compound semiconductor substrate.